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APR. '16.

UNITED STATES DEPARTMENT OF AGRICULTURE  
BUREAU OF BIOLOGICAL SURVEY

## COOPERATION BY FIELD MEN IN IMPROVING REFERENCE

## COLLECTIONS FOR ECONOMIC INVESTIGATIONS.

Reference collections of fruits and seeds, and of insects and other small animals, are indispensable aids in studying the food habits of birds and mammals. The more complete the collections, the better the Bureau is equipped. Field men are urged to utilize their exceptional opportunities for gathering specimens; many localities in which they work have never been visited by botanical or entomological collectors and specimens of great value may easily be obtained.

FRUITS AND SEEDS.--Collections of fruits and seeds of grasses, sedges, and weeds of all kinds are desired as well as those of the larger plants. They should be gathered with enough of the plant to permit identification. The manila penalty envelopes supplied to field men will hold a sufficient portion of most plants and are convenient receptacles. Put one specimen in an envelope and write full data concerning it on the face of the envelope. Fleshy plants may be dried in folded newspapers before shipping. Bundles of the envelopes may be sent by mail.

INSECTS.--The principal methods of collecting insects are: Capturing them upon flowers, beating them from foliage, sweeping them from grass and other herbage, netting them in the air, and securing them in rotten logs, under bark, stones, logs, boards, and litter. Collecting is also profitable where nocturnal insects are attracted to light. A good device for attracting insects at night may be improvised by supporting a white cloth tepee-wise over a lantern or other light. Outfits suited to any of these operations for which nets are needed will be furnished upon request; these include, besides the nets, killing bottles and material for packing specimens. Killing bottles should be emptied daily, and the specimens placed, well spaced, on a layer of sheet cotton in a small wooden box, covered with another layer of cotton, and so on. Each day's collecting should be kept separate and carefully labeled with full data. The contents of each package should be made very snug before shipment, and it is better to wrap newspaper, corrugated board, or other shock-absorbing material about it before mailing.

Note: Butterflies and moths are not desired. Caterpillars and other larvae may be preserved in alcohol. Extra space in receptacles in which alcoholic specimens are shipped should be filled with cotton so that specimens will not be injured by tumbling about. Specimens in liquids must be carefully packed to prevent breakage of containers; they may be shipped in authorized mailing cases supplied by the Bureau.

OTHER SPECIMENS.--Centipedes, millipeds, crustaceans, molluscs, small reptiles, and batrachians, as well as heads and feet of birds and heads of small mammals, also are desirable. They may be preserved in formalin or alcohol and shipped as directed in the preceding paragraph.

